91909

JSC DNEPROSPETSSTAL
YUZHNOYE SHOSSE
69008, ZAPOROZHYE
UKRAINE

Purchase order No.: 26023
TECHN.PROTOCOL № 210-06 SPEC.№6220/17683-000 OP
ASTM A182 A182M-05;ASME SA-182 SA-182M-04;ASTM A276-04;
ASTM A479 A479M-04;ASTME SA-479 SA-479M-04;ASTM A484 A484M-05;
ASTM A193 A193M-04(Gr B8M,Cl.1 ;(EXC PAR 6.3)
ASME SA-193 SA-193M-04(Gr B8M,Cl.1)(EXC PAR 6.3)

Sheets:11 Sheet: 8
QUALITY CERTIFICATE EN10204/3.1.B. Nr.188788
PLANT ORDER № 8260236220

CUSTOMER

Customer's item number: 11406255

PRODUCT DESCRIPTION
Rods of stainless steel,hot rolled,peeled. Прутки из нержавеющих сталей горячекат.обточенные.
STEEL MAKING PROCESS: EAF+AOD
СПОСОБ ВЫПЛАВКИ:Электродуговая печь+АКР
Round 6.25in/158.75 mm L=3.1-5.8m
Grade: 316/F316L/316L/F316L

QUANTITY: 1pack Q-1764lb/800 kg
(number of pcs) 1pack Q-3968lb/1800kg

Delivery condition
solution annealed :1900-2010° F(1040-1100°C)/water
термообработка:закалка в воду

ANALYSES, %	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	V	W	Ti	Co	Nb	N_2		
REQUIRED	<.030	<1,00	1.25-2.00	<.040	.020-.030	16.00-18.00	10.00--14.00	2.00--3.00	<.10	<.40	<.10	<.20	<.15	<.20	<.20	<.10		
CAST № 91909	.019	.45	1.30	.040	.022	16.64	10.50	2.07	.040	.27	.03	.10	.029	.086	.011	.035		

MECANICAL PROPERTIES	Yield Strength, Ksi(N / mm²) Re (R_{e1})	Tensile Strength, Rm,ksi (N /mm²)	Elongation A_5 %	Reduction of area, Z %	Brinel Hardness HB	Impact strength, KV, J
REQUIRED	30(205)	75 (515)	45	50	140-223	100
EFFECTIVE	37.5(257)	82.6(567)	64	77	167	297

Heat treatment (specimen) Delivery condition: In state of delivery

US - testing | yes | Results: SEP 1921, 3/ Dd - O.K.

Radiation free; mercury free. No Weld or Weld repair.

TECHNICAL REQUIREMENTS:
Macrostructure – GOOD
GRAIN SIZE : 5 to ASTM E 112-96
Nonmetallic inclusions ASTM E 45-95 (Method A)

A		B		C		D	
thin	thick	thin	thick	thin	thick	thin	thick
2.5	2.0	1.5	1.0	0.0	0.0	1.0	1.0

ICC-ASTM A262-02a(Method E)-test: O.K.
„Dimension/surface defects test,anti-mixing test – O.K. "
Ratio of reduction-11.28
NOTE:
The customer confirms that the above stated requirements to chemical composition, dimensions,mechanical properties ,packing,marking and inspection certificate comply with the specification SS1 Rev3.

Manufacturer: JSC DNEPROSPETSSTAL
Date: 22.10.06 Signed:
T. Abashkina

Zaporozhye
Made in Ukraine.

This report is a copy of original mill certificate and verifies that the product meets the requirements as originally ordered by /

DATE: 11/23/06 VERIFIED BY: AA

E16457